Relative Efficacy of a Multisession Sexual Risk–Reduction Intervention for Young Men Released From Prisons in 4 States

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Objectives. We compared the effects of an enhanced multisession intervention with a single-session intervention on the sexual risk behavior of young men released from prison.

Methods. Young men, aged 18 to 29 years, were recruited from US prisons in 4 states and systematically assigned to the prerelease single-session intervention or the pre- and postrelease enhanced intervention. Both interventions addressed HIV, hepatitis, and other sexually transmitted infections; the enhanced intervention also addressed community reentry needs (e.g., housing, employment). Assessment data were collected before intervention, and 1, 12, and 24 weeks after release.

Results. A total of 522 men were included in intent-to-treat analyses. Follow-up rates ranged from 76% to 87%. Unprotected vaginal or anal sex during the 90 days before incarceration was reported by 86% of men in the enhanced intervention and 89% in the single-session intervention (OR = 0.78; 95% CI = 0.46, 1.32). At 24 weeks, 68% of men assigned to the enhanced intervention reported unprotected vaginal or anal sex compared with 78% of those assigned to the single-session intervention (OR = 0.40; 95% CI = 0.18, 0.88).

Conclusion. Project START demonstrated the efficacy of a sexual risk–reduction intervention that bridges incarceration and community reentry. (*Am J Public Health.* 2006;96:1854–1861. doi:10.2105/AJPH.2004.056044)

The prevalence of HIV, hepatitis, and other sexually transmitted infections (STIs) is higher among incarcerated populations than among the general US population.[1,2] The number of confirmed AIDS cases was 3 times higher in 2003 among incarcerated individuals than in the general population,[3] and elevated rates of hepatitis and other STIs have also been reported.[4–10] Consistent with these data, men entering correctional settings often report behaviors that place them and their partners at considerable risk for HIV, hepatitis, and other STIs, including unprotected sexual intercourse with multiple and high-risk sexual partners, injection drug use, and needle sharing.[5,11,12]

These health disparities affect the more than 2 200 000 adults who were incarcerated in the United States as of the end of 2004.[13] Most of these adults are male (93%) and are members of racial/ethnic groups that are disproportionately affected by HIV and other STIs.[13] Although the lives of many incarcerated persons have already been affected by HIV, hepatitis C, or viral STIs, these lifelong infections can be prevented among younger men who are incarcerated. In 2004, 35% of men in state or federal prisons were aged younger than 30 years.[13]

The period before men are released from prison presents an important opportunity to reach this high-risk group and motivate them to avoid risk behavior after they are released from prison.[14] However, few published intervention trials for incarcerated men have assessed sexual behavior outcomes. Two studies described the ability of a 1-session and an 8-session sexual risk–reduction intervention (delivered before release from prison) to increase condom use at participants' first sexual encounter after release.[15,16] Another study found that 2 6-session prerelease interventions for young offenders reduced sexual risk, but the study failed to demonstrate that sexual risk–reduction skills training was superior to an anger management intervention that was provided to the comparison group.[17]

Additional research is needed to determine if the effects of a prerelease intervention can be enhanced by providing transitional support that continues after release from prison and addresses community reentry needs that may interfere with young men's ability to adopt safer sex practices. These competing needs can include unstable housing and employment, lack of access to primary and preventive healthcare, estrangement from family and relational supports, substance use, mental health and coping problems, poor self-esteem and self-acceptance, and other problems.[14,18–21]

Although there is evidence that transitional interventions can reduce substance use behavior among men leaving correctional settings,[22] the effect of a community reentry intervention on men's sexual risk has not been the subject of published reports. This article describes the results of Project START, a multisite study designed to test a multisession risk-reduction intervention for young men being released from prison.

METHODS

Eligibility and Recruitment

Participants were recruited in 2001 and 2002 from 8 state prisons in 4 states (California, Mississippi, Rhode Island, and Wisconsin). The sample consisted of men who were aged 18 to 29 years, incarcerated at least 90 days, scheduled for release within 14 to 60 days, able to provide informed consent and communicate in English, willing to provide postrelease contact information, and released to an unrestricted environment in site-specific catchment areas.

The correctional institutions provided a monthly list of men aged 18 to 29 years scheduled for release. When the number of potential participants exceeded the recruitment quota, potential participants were either sequentially approached according to their scheduled release date or randomly selected for approach. Participants were assigned to intervention groups on the basis of the month of recruitment (California and Rhode Island) or the month of anticipated release (Mississippi and Wisconsin).

Incentives

Reimbursements for completing all 4 assessments ranged from $180 to $200 across sites. In addition to monetary incentives, participants were offered free condoms, resource materials, and a $10 reimbursement for transportation or childcare costs for all activities conducted outside a correctional facility. To facilitate follow-up, all participants were offered a no-cost pager, which they were allowed to keep.

Interventions

The intervention trial was informed by extensive formative research.[5,7,20,23–25] On the basis of this research, 2 interventions—a single-session intervention and an enhanced intervention—were compared. Both interventions incorporated features of prevention case management,[26,27] motivational interviewing,[28] and harm reduction.[29]

The single-session intervention was based on a brief HIV-risk assessment and risk-reduction planning intervention for incarcerated men.[16] It consisted of a 60- to 90-minute individual session that was conducted approximately 2 weeks before release. The interventionist assessed the participant's HIV/AIDS, hepatitis, and STI knowledge and risk behavior and helped the participant develop a personal risk-reduction plan. The interventionist provided information, skills training, and referrals as required and worked with the participant to identify incremental steps toward risk reduction.

The enhanced intervention consisted of 2 scheduled individual sessions before release and 4 scheduled sessions at 1, 3, 6, and 12 weeks after release. The first in-prison session was the same as the single-session intervention. The second in-prison session focused on community reentry needs and included assessment, planning, and problem solving, and facilitated referral for housing, employment, financial problems, social relationships, substance abuse and mental health treatment, legal problems, and avoiding reincarceration. The postrelease sessions involved review and updating of the plan developed during previous sessions, including discussion of facilitators of and barriers to implementing the risk-reduction plan. In-prison sessions lasted 60 to 90 minutes; the postrelease sessions were 30 to 60 minutes. Additional sessions were offered to enhanced intervention participants as needed during the intervention period.

Assessment Procedures and Measures

Participants were assessed before release and 1 week, 12 weeks, and 24 weeks after release. In Mississippi, Rhode Island, and Wisconsin, assessments were conducted using the Questionnaire Development System audio computer-assisted self-interview technology (Nova Research Company, Bethesda, Md). Because prison policies in California prohibited the use of laptop computers, this site used interviewer-administered questionnaires. Separate staff conducted assessment and intervention activities in all sites.

Each assessment measured life circumstances, utilization of community resources and prevention services, substance use, sexual practices, HIV and STI beliefs, depression and coping, and demographic characteristics. The reporting period for most prerelease assessment items was the 90 days before incarceration. The 1-week assessment addressed the period since release from prison, and the 12- and 24-week assessments addressed the time since the previous assessment. The assessments were limited to risk behavior that occurred in the community. In-prison risk behavior was assessed only in a supplemental study that was conducted after the 24-week assessment.[30]

Primary outcomes, which were defined at the start of the study, were sexual practices with any, main, and nonmain partners and nonsterile injection drug use. Sexual practices were assessed separately for main and nonmain sexual partners. Main partners were defined as "someone you feel a special emotional attachment or commitment to." All other partners were considered to be nonmain partners. Partner-specific information was collected for the most recent main partner and the most recent nonmain partner during the reporting period. Aggregate information was collected for other main and nonmain partners. For each type of partner, the number of times each type of sex was performed (i.e., vaginal intercourse, insertive and receptive oral sex, insertive and receptive anal sex) and the number of times condoms were used for each type of sex were assessed. The questionnaire also assessed whether each type of partner was perceived to be an "at-risk" partner, which was defined as a partner who: (1) had ever injected drugs, (2) had ever smoked crack, (3) had ever traded sex for money or drugs, (4) had ever had an STI, (5) currently had other sexual partners, or (6) was HIV seropositive.

Responses to the sex behavior items were combined to form dichotomous variables representing unprotected vaginal or anal sex at last sex with any partner and with an at-risk partner. Separate dichotomous variables were calculated for unprotected intercourse during the entire recall period for any, main, and nonmain partners.

Lifetime history of injection drug use was assessed by asking participants if they had ever injected any drugs, including steroids. Recent use of injection drugs was assessed by first asking participants about the use of specific drugs and then asking if each drug had been injected.

Reincarceration was defined *a priori* as a secondary outcome. Reincarceration was assessed by asking participants whether they had been held in a jail or prison for at least 1 night. Reincarceration was also assessed by documenting whether follow-up assessments were conducted in a correctional facility.

Analyses

Intent-to-treat analyses were conducted that compared the 2 intervention groups at each postrelease follow-up. For the 1-week follow-up, outcomes were modeled with SAS Version 8.2 logistic regression (SAS Institute Inc, Cary, NC). The 12-week and 24-week follow-up data were analyzed separately from the 1-week data because of differences in the recall periods. Each outcome was modeled as either a binary or an ordinal variable with nonlinear mixed models. All models included indicator variables for intervention arm, site, assessment visit (12- and 24-week analyses only), and all 2-way and 3-way interactions. Analyses controlled for the number of days spent free in the community and, for risk behavior, preincarceration levels of the outcome behavior.

TABLE 1—Project START Recruitment and Study Participation Rates

	Total, No./ Denominator (%)	Single-Session Intervention, No./ Denominator (%)	Enhanced Intervention, No./ Denominator (%)
Recruitment			
Attempted to contact	830 (100)	400/400 (100)	430/430 (100)
Contacted	724/830 (87.2)	354/400 (88.5)	370/430 (86.0)
Screened–eligible	592/724 (81.8)	294/354 (83.1)	298/370 (80.1)
Consented	561/592 (94.8)	281/294 (95.6)	280/298 (94.0)
Prerelease activities			
Assessed and released[a]	522/561 (93.0)	259/281 (92.2)	263/280 (93.9)
Intervention session 1	503/522 (96.4)	244/259 (94.2)	259/263 (98.5)
Intervention session 2	…	…	233/263 (88.6)
Postrelease assessments			
Week 1	449/522 (86.0)	226/259 (87.3)	223/263 (84.8)
Week 12	414/522 (79.3)	198/259 (76.4)	216/263 (82.1)
Week 24	432/522 (82.7)	213/259 (82.2)	219/263 (83.3)
Postrelease intervention sessions			
Week 1	…	…	210/263 (79.8)
Week 3	…	…	173/263 (65.8)
Week 6	…	…	173/263 (65.8)
Week 12	…	…	196/263 (74.5)

Note. START = Sexually Transmitted Disease and AIDS Risk Reduction Trial.
[a]Satisfied inclusion criteria for intent-to-treat analyses.

RESULTS

Participants and Participation Rates

Of the 830 men selected for recruitment, 724 (87%) were contacted, and 561 (77%) were screened, determined to be eligible, and provided informed consent (Table 1). Of these, 522 (93%) initiated the prerelease assessment and were released from prison to a nonrestrictive environment, thus meeting criteria for inclusion in the intent-to-treat analyses. Characteristics of these men are shown in Table 2. Most had been tested previously for HIV (88%); 2 reported that they were HIV-seropositive. Almost all had 1 or more sexual partners during the 90 days before incarceration (M=5.0; SD=9.4), and unprotected sexual intercourse was common. Few (n=11) had sex with a male partner during this period. The single-session intervention and enhanced intervention groups were comparable, except that the single-session intervention group was more likely to have been tested for HIV (Table 2).

Table 1 presents attendance rates for both interventions. In the enhanced intervention, 67% received 5 or more of the 6 scheduled sessions. A total of 91 optional enhanced intervention sessions were delivered to 49 participants, of whom 61% received 1 additional session. Retention for follow-up assessments ranged from 76% to 87% (Table 1), and there were no significant differences between intervention groups at any follow-up. There were no significant differences in prerelease characteristics or risk behavior for men who returned for follow-up versus those who were lost to follow-up at any given postrelease assessment.

Sexual Behavior

No significant differences were observed between the single-session intervention group and the enhanced intervention group before the last enhanced intervention session was delivered after the 12-week assessment (Table 3). At 1 week, the enhanced intervention group reported slightly lower rates of unprotected intercourse compared with the single-session intervention group. At 12 weeks, this pattern was observed for all behaviors, but these differences did not achieve statistical significance.

Significant differences between groups were observed at the 24-week assessment, which was scheduled 12 weeks after the last enhanced intervention session. At 24 weeks, the enhanced intervention group was significantly less likely than the single-session intervention group to report unprotected vaginal or anal intercourse during their most recent sexual encounter (Table 3). They were also less likely than men in the single-session intervention group to report any unprotected intercourse in the reporting period. When sexual behaviors with main and nonmain partners were analyzed separately, the observed effects were explained by differences in unprotected intercourse with main, but not nonmain, sexual partners (Table 3).

An additional series of analyses was conducted to determine whether differences between the enhanced intervention and single-session intervention groups could be explained by differences in the amount of time that had elapsed since intervention. For the single-session intervention group, all follow-up assessments were conducted after the intervention was completed. The only assessment conducted after all enhanced intervention sessions were delivered was the 24-week assessment. Thus, additional comparisons were made with data collected at the 12-week assessment for the single-session intervention group and the 24-week assessment for the enhanced intervention group. These assessment periods best approximated a 3-month postintervention follow-up for both groups.

Results of these analyses showed that fewer men in the enhanced intervention group reported unprotected intercourse during their most recent sexual encounter compared with men in the single-session intervention group (Table 3). The enhanced intervention group was also significantly less likely to report unprotected intercourse during any sexual encounter since the last assessment than was the single-session intervention group. When analyzed by partner type, the enhanced intervention group was less likely than the single-session intervention group to report unprotected intercourse with a main partner, but there were no differences for nonmain partners.

TABLE 2—Selected Characteristics of Participants Assigned to Single-Session Intervention (SSI) or Enhanced Intervention (EI), Measured at Prerelease Assessment

	Overall No./ Denominator, n = 522	Intervention Group, No. (%)		
		SSI No./ Denominator, n = 259	EI No./ Denominator, n = 263	χ^2 *P*
Site				
California	146/522 (28.0)	72/259 (27.8)	74/263 (28.1)	.99
Mississippi	65/522 (12.5)	31/259 (12.0)	34/263 (12.9)	
Rhode Island	152/522 (29.1)	76/259 (29.3)	76/263 (28.9)	
Wisconsin	159/522 (30.5)	80/259 (30.9)	79/263 (30.0)	
Age				
18–21 years	171/522 (22.6)	88/259 (34.0)	83/263 (31.6)	.69
22–25 years	249/522 (47.7)	124/259 (47.9)	125/263 (47.5)	
26–29 years	102/522 (19.5)	47/259 (18.1)	55/263 (20.9)	
Race/ethnicity				
White, non-Hispanic	118/522 (22.6)	58/259 (22.4)	60/263 (22.8)	.53
Black, non-Hispanic	271/522 (51.9)	135/259 (52.1)	136/263 (51.7)	
Hispanic, any race	72/522 (13.8)	40/259 (15.4)	32/263 (12.2)	
Other, non-Hispanic	61/522 (11.7)	26/259 (10.0)	35/263 (13.3)	
Education				
Less than high school	233/519 (44.9)	117/257 (45.5)	116/262 (44.3)	.78
High-school graduate/GED	286/519 (55.1)	140/257 (54.5)	146/262 (55.7)	
Marital status				
Single, divorced, widowed	486/513 (94.7)	242/254 (95.3)	244/259 (94.2)	.59
Married	27/513 (5.3)	12/254 (4.7)	15/259 (5.8)	
Type of sexual partners[a]				
No sexual partner	14/516 (2.7)	5/254 (2.0)	9/262 (3.4)	.52
Main only	135/516 (26.2)	67/254 (26.4)	68/262 (26.0)	
Nonmain only	71/516 (13.8)	31/254 (12.2)	40/262 (15.3)	
Main and nonmain	296/516 (57.4)	151/254 (59.4)	145/262 (55.3)	
Any at-risk partner	341/516 (66.1)	166/254 (65.4)	175/262 (66.8)	.73
At-risk main partner	195/516 (37.8)	95/254 (37.4)	100/262 (38.2)	.86
At-risk nonmain partner	270/510 (52.9)	135/252 (53.6)	135/258 (52.3)	.78
Unprotected sexual intercourse				
Unprotected vaginal/anal sex with any partner[a]	452/516 (87.6)	226/254 (89.0)	226/262 (86.3)	.35
Unprotected vaginal/anal sex with main partner[a]	390/511 (76.3)	201/252 (79.8)	189/259 (73.0)	.07
Unprotected vaginal/anal sex with nonmain partner[a]	248/513 (48.3)	119/252 (47.2)	129/261 (49.4)	.62
Unprotected vaginal/anal sex at last sexual intercourse[a]	404/509 (79.4)	206/251 (82.1)	198/258 (76.7)	.14
Unprotected vaginal/anal sex with at-risk partner at last sexual intercourse[a,b]	173/512 (33.8)	88/251 (35.1)	85/261 (32.6)	.55
Drug use				
Marijuana use[a]	409/518 (78.9)	198/256 (77.3)	211/262 (80.4)	.37
Other noninjection drug use[a]	256/519 (49.3)	124/256 (48.4)	132/263 (37.5)	.69
Injection drug use–ever used	41/519 (7.9)	19/256 (7.4)	22/263 (8.4)	.69
Injection drug use[a]	32/519 (6.2)	14/256 (5.5)	18/263 (6.8)	.52

Continued

Injection Drug Use

Few participants reported injection drug use at the 1-week (4/224 single-session intervention, 2/220 enhanced intervention), 12-week (7/194 single-session intervention, 5/207 enhanced intervention), or 24-week assessment (7/196 single-session intervention, 7/180 enhanced intervention). Given the low prevalence of injection drug use in both groups, outcome analyses were not performed.

Reincarceration

Reincarceration was common in both intervention groups—44% reported at 24 weeks that they had been in a jail or prison at least once since release. By contrast with the patterns observed for sexual risk, there was a significant difference between the single-session intervention and enhanced intervention groups for self-reported reincarceration previous to, but not after, the conclusion of the enhanced intervention. At 12 weeks, more men in the enhanced intervention group reported that they had been reincarcerated compared with the single-session intervention group (38.9% vs 26.9%; adjusted OR=2.60; 95% CI=1.09, 6.23). This difference was not significant at the 24-week assessment (49.1% enhanced intervention vs 39.8% single-session intervention; adjusted OR=1.19; 95% CI=0.81, 4.52).

Differences in self-reported reincarceration were qualified by an intervention group by site interaction that approached significance at 12 weeks (*P*=.061), and was not present at 24 weeks (*P*=.54). At 12 weeks, in California only, the enhanced intervention group was significantly more likely to report having been reincarcerated than the single-session intervention group (64.5% vs 27.9%, respectively; OR=12.26; 95% CI=2.58, 58.17). No significant differences in reincarceration rates between enhanced intervention and single-session intervention participants were observed in any of the other sites.

There was no significant difference between groups in the percentage of assessments that were conducted in jail or prison at either the 12-week (22.2% enhanced intervention vs 16.2% single-session intervention; adjusted OR=0.86; 95% CI=0.33, 2.29) or the 24-week assessment (31.5% enhanced intervention vs 23.0% single-session

TABLE 2—*Continued*

Ever tested for HIV	451/513 (87.9)	230/253 (90.9)	221/260 (85.0)	.04
Previous incarcerations–lifetime				
0	22/507 (4.3)	12/251 (4.8)	10/256 (3.9)	.71
1–3	123/507 (24.3)	61/251 (24.3)	62/256 (24.2)	
4–6	120/507 (23.7)	57/251 (22.7)	63/256 (24.6)	
7–9	102/507 (20.1)	56/251 (22.3)	46/256 (18.0)	
10 or more	140/507 (27.6)	65/251 (25.9)	75/256 (29.3)	

Note. GED = general equivalency diploma.
[a]During the 3 months before the current incarceration.
[b]Partner described by participant as having a history of injecting drug use, crack cocaine use, exchange of sex for money or drugs, sexually transmitted infection, HIV infection, or who currently has other sexual partners.

intervention; adjusted OR=2.22; 95% CI= 0.71, 6.91). A significant intervention group by site interaction was present at 12 weeks ($P<.05$), but not at 24 weeks ($P=.86$). At 12 weeks, the enhanced intervention group in California was significantly more likely to have been assessed in jail or prison than the single-session intervention group (56.5% enhanced intervention vs 18.0% single-session intervention; adjusted OR=8.78; 95% CI= 2.12, 36.34). No significant differences were observed in the other sites.

DISCUSSION

Project START demonstrated that a multisession community-reentry intervention can lead to lower rates of sexual risk behavior among young men who are released from prison. Significantly lower rates of unprotected intercourse were observed at 24 weeks for men assigned to the enhanced intervention compared with those assigned to the single-session intervention. These differences continued to be present even when differences in the amount of time since the last intervention contact were taken into account. This success is noteworthy given the difficulties inherent in working in correctional settings, including restricted access to participants, limited private space, negative attitudes toward prevention activities among some correctional staff, and restrictions on HIV-prevention materials in prison.[31]

Prerelease data from Project START support the need to provide HIV, STI, and hepatitis risk-reduction interventions to incarcerated men. The majority of men in both intervention groups reported unprotected intercourse before incarceration. Unprotected intercourse with main partners was reported by 76% of participants, and nearly half

TABLE 3—Postrelease Sexual Practices Reported by Scheduled Time of Postrelease Assessment for Single-Session Intervention (SSI) and Enhanced Intervention (EI) Groups, No. (%)

	1 Week			12 Weeks			24 Weeks			EI at 24 weeks vs SSI at 12 weeks
	SSI No./ Denominator, n = 226	EI No./ Denominator, n = 223	Adjusted OR[a] (95% CI)	SSI No./ Denominator, n = 198	EI No./ Denominator, n = 216	Adjusted OR[b] (95% CI)	SSI No./ Denominator, n = 213	EI No./ Denominator, n = 219	Adjusted OR[b] (95% CI)	Adjusted OR[b] (95% CI)
Unprotected vaginal/anal sex at last sexual intercourse	105/219 (47.9)	90/217 (41.5)	0.74 (0.48, 1.15)	128/181 (70.7)	123/203 (60.6)	0.57 (0.29, 1.13)	131/191 (68.6)	101/171 (59.1)	0.48 (0.24, 0.95)	0.45 (0.22, 0.91)
Unprotected vaginal/anal sex with any partner	114/223 (51.1)	95/218 (43.6)	0.64 (0.44, 1.04)	147/190 (77.4)	142/207 (68.6)	0.56 (0.26, 1.17)	151/193 (78.2)	122/179 (68.2)	0.40 (0.18, 0.88)	0.45 (0.20, 0.98)
Unprotected vaginal/anal sex with a main partner	86/219 (39.3)	82/217 (37.8)	0.99 (0.63, 1.54)	115/187 (61.5)	117/203 (57.6)	0.87 (0.40, 1.89)	126/191 (66.0)	94/173 (54.3)	0.30 (0.13, 0.71)	0.43 (0.19, 0.99)
Unprotected vaginal/anal sex with a nonmain partner	35/223 (15.7)	24/218 (11.0)	0.63 (0.33, 1.20)	64/188 (34.0)	58/207 (28.0)	0.62 (0.40, 1.89)	61/192 (31.8)	57/179 (31.8)	0.99 (0.50, 1.94)	0.73 (0.38, 1.40)
Unprotected vaginal/anal sex with at-risk partner at last sexual intercourse[c]	39/220 (17.7)	42/217 (19.4)	0.99 (0.58, 1.70)	61/182 (33.5)	51/203 (25.1)	0.53 (0.28, 1.02)	46/194 (23.7)	44/174 (25.3)	0.87 (0.41, 1.86)	0.42 (0.20, 0.90)

Note. OR = odds ratio; CI = confidence interval. Numbers for specific sexual practices may be lower than the total number of men interviewed at a given assessment because only sexual practices in the community were assessed. Questions about sexual practices were not asked of men who were continuously incarcerated during the follow-up period. Data are missing in only a small number of cases because a question was skipped or a participant declined to answer.
[a]Odds ratios estimated from a logistic model that included intervention group, site, covariates for days in community, and the outcome measured at the prerelease interview as well as 2-way arm by site interactions.
[b]Odds ratios estimated from a nonlinear mixed model that included intervention group, site, time (12 or 24 weeks), covariates for days in community, and the outcome measured at the prerelease interview as well as 2-way and 3-way interactions among arm, site, and time.
[c]Partner described by the participant as having a history of injecting drug use, crack cocaine use, exchange of sex for money or drugs, sexually transmitted infection, HIV infection, or who currently has other sexual partners.

(48%) had unprotected sexual intercourse with a nonmain partner. These rates of unprotected intercourse are of particular concern given that two thirds of participants believed that 1 or more of their partners had a risk factor for HIV, STI, or hepatitis. The rates of substance use observed in this sample represent another public health concern—49% of participants had used noninjection drugs during the 3 months before incarceration, and 8% had ever injected drugs. Together, these data support the need for a concerted public health effort to reduce the effects of risky sexual practices and substance abuse on the health of incarcerated young men and their sexual partners.

The enhanced intervention tested in this study addressed sexual risk within the context of competing issues affecting young men's ability to successfully reenter the community. These issues may limit the ability of at-risk persons to maintain safer sex practices, but few sexual risk–reduction interventions have addressed competing life issues. Exceptions include interventions for at-risk women[32] and injection drug users,[33] as well as prevention case management, which the Centers for Disease Control and Prevention endorses for high-risk populations with multiple needs.[26,27] Previous evaluations of case management interventions that addressed sexual risk either lacked a comparison group or found no difference in risk between those who received case management and those who did not.[27,34–36] The present findings contribute new evidence supporting the effectiveness of prevention case management and other individually tailored interventions that address sexual risk within the context of competing threats to health and well-being.

Although the enhanced intervention was associated with lower rates of sexual risk with all partners relative to the single-session intervention, the intervention effect was specific to sexual practices with main partners. This was an unexpected finding, given that other intervention trials have shown greater reductions in risk with nonmain partners than with main partners.[37–39] The lower rates of unprotected sexual intercourse with main partners in the enhanced intervention group may have substantial public health benefits. Given the increased burden of STIs among incarcerated men, reductions in risk behavior protect the health of these men's sexual partners. They also protect men with high-risk partners. Before incarceration, a third of study participants had a main partner who was described as having 1 or more risks for HIV, hepatitis, or other STIs.

The present findings are consistent with previous research, which showed that unprotected intercourse is more common with main than with nonmain partners.[38,40,41] The ability of the enhanced intervention to differentially motivate behavior change with main, but not nonmain partners, may be explained in part by the relatively low rates of unprotected intercourse with nonmain partners reported at prerelease and postrelease assessments. These rates were notably lower at follow-up in both the enhanced intervention and single-session intervention groups, suggesting that they may have been affected by potential influences that were common to both groups (e.g., HIV testing or other prevention services received during incarceration, the single-session intervention, free condoms).

It is unlikely that the between-group difference in self-reported reincarceration at 12 weeks was caused by the enhanced intervention. In previous studies, behavioral interventions and prerelease planning with follow-up after release have reduced reincarceration.[17,42] Significant differences in reincarceration rates were observed in only 1 of 4 sites, suggesting that this finding may be an artifact of site-specific differences in follow-up procedures. In this site, a community-based organization that works within local prisons (and is near the prison) was responsible for conducting intervention activities and following participants assigned to the enhanced intervention through the 12-week assessment. A university-based team with experience tracing community-based samples followed the single-session intervention participants. This team also was responsible for following the enhanced intervention participants *after* the 12-week assessment. The community-based organization was more familiar with prison personnel and procedures, which may have made it easier for its staff to gain access to men who were reincarcerated. This explanation is consistent with the differences in reincarceration that were observed at 12 weeks, but not at 24 weeks, when both intervention groups were followed by the university-based team.

A number of limitations should be noted. First, the enhanced intervention was compared with a single-session intervention that controlled for experimental demand but not attention, which raises the possibility that increased staff contact alone could explain differences between the enhanced intervention and single-session intervention groups. Second, the enhanced intervention group was followed for only 12 weeks after the last intervention session; thus, it is not known whether behavior changes were sustained over a longer period of time. Third, data on the risk characteristics of sexual partners were not available for all individual partners. Thus, we could not assess the number of risky partners or condom use specifically with these partners. Finally, it is not known whether results are generalizable to other incarcerated populations.

These limitations are offset by a number of strengths. The use of nonbiased assignment, the comparability of intervention groups at the prerelease assessment, high retention rates for follow-up assessments, and the lack of differential attrition bolster the study's internal reliability. The multisite nature of the project, low refusal rates, and nonbiased selection of research participants strengthen the external reliability of study findings.

Efforts to reduce HIV, hepatitis, and other STIs among incarcerated men can make an important contribution to community health, but the potential benefits of such efforts have not been fully realized.[19] The enhanced intervention tested in Project START provides an evidence-based strategy for reducing sexual risk and should be considered for use with other young men in correctional settings. Given the disproportionate burden of disease in this population, there is an urgent need for health departments and community-based organizations to work with correctional institutions to improve the health of these men, their partners, and their communities. ■

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Contributors

R.J. Wolitski led the writing group for this article. Members of the Project START Study Group worked collaboratively to design the study, develop intervention and assessment materials, plan statistical analyses, and interpret study findings.

Human Participant Protection

All research activities were approved by institutional review boards at the Centers for Disease Control and Prevention (CDC) and each of the institutions funded under the cooperative agreement. As an additional safeguard, the project received a federal certificate of confidentiality.

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